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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,098	02/13/2004	Makoto Taniguchi	118683	5342

25944 7590 07/10/2006

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EXAMINER

MURALIDAR, RICHARD V

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/777,098

Applicant(s)

TANIGUCHI, MAKOTO

Examiner

Richard V. Muralidar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 March 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

FINAL ACTION

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

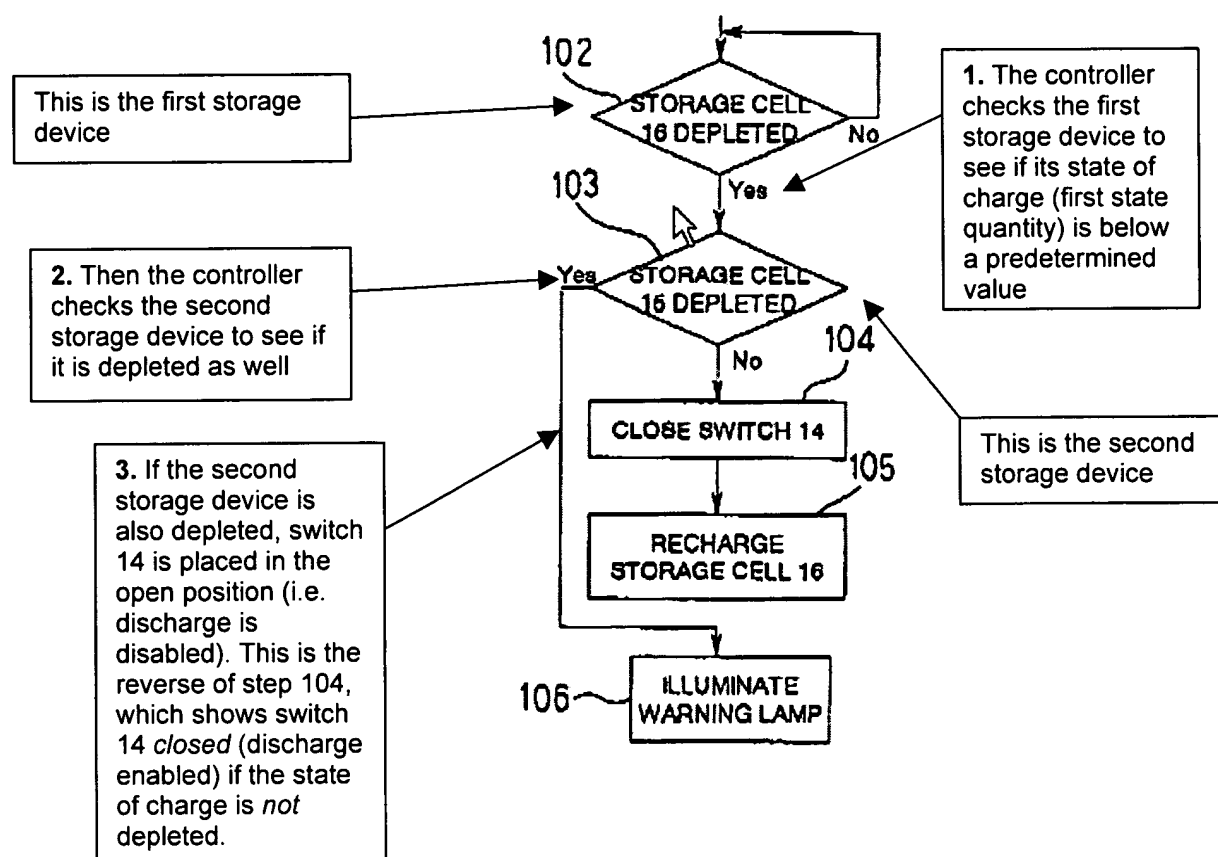
[b] The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13 are rejected under 35 U.S.C. 102[b] as being anticipated by Nishimura [US-6313546].

With respect to Claim 1, [amended] Nishimura discloses an onboard power supply system [col. 1 lines 7-9] comprising: a power generator [Fig. 1 generator 2]; a first electrical power storage device [Fig. 1 battery 16 is the first battery] charged by the power generator [charged by generator 2 through dc-dc converter 12 and through key switch 6]; a second electrical power storage device [Fig. 1 battery 15 is the second battery]; and a charge and discharge control device [Fig. 3 controller 17 in conjunction with switch 14] for controlling charge and discharge of the second electrical power storage device based on at least one of a first state quantity that indicates a state of charge of the first power storage device [Fig. 1 input 34 to controller 17] and a second state quantity that indicates a state of power generation of the power generator [Fig. 1 input 33 to controller 17 from generator 2], wherein the charge and discharge control device disables the discharge of the second electrical power storage device when the first state quantity is smaller than a predetermined value [i.e. the second battery is

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turned off when the state of charge of the first battery is below a certain level; referring to the flowchart in Fig. 2 (the portion in question is shown in Drawing 1 below): at step 102, the controller checks the first state quantity (state of charge) of the first battery (storage cell 16). If the first battery is low (below a predetermined value), the second battery (storage cell 15) is checked to see if its state of charge is good, at step 103. If the second battery is also depleted (following the yes line), switch 14 is opened (the discharge is disabled), and the warning lamp is illuminated. This is the reverse of what is shown at step 104, which says if the second battery is good, then close switch 14 to enable discharge to first battery 16].



Drawing 1: An extract of the flowchart shown by Nishimura in Fig. 2

With respect to Claim 2, [cancelled] Nishimura discloses that the charge and discharge control [Fig. 3 controller 17 in conjunction with switch 14] device controls the charge and discharge of the second electrical power storage device [Fig. 3 storage battery 15] when the first state quantity is equal to or smaller than a predetermined value [Fig. 2 Flowchart, steps 102 to 105; col. 3 lines 52-67 and col. 4 line 1].

With respect to Claim 3, [original] Nishimura discloses a power generation control device [Fig. 1 controller 17], wherein the power generation control device is connected with the power generator [Fig. 1 output 31 connects controller 17 to power generator 2] for controlling the state of power generation of the power generator according to operating conditions of a vehicle [Fig. 2 Flowchart, col. 3 lines 8-16].

With respect to Claim 4, [original] Nishimura discloses that the power generation control device reduces the power generation of the power generator when the vehicle is in an accelerating condition [the voltage regulator in automobile supply systems implicitly reduces the voltage of the power generator (the alternator) when engine rotation increases, otherwise the excessive voltage output of the generator could cause damage to the electrical system. The voltage regulator attempts to maintain the output voltage within an acceptable range regardless of engine rotational speed].

With respect to Claim 5, [original] Nishimura discloses that the charge and discharge control device reduces the discharge [opens switch 14] of the second electrical power storage device when the power generation of the power generator is reduced by the power generation control device [this is implicitly performed by controller 17- in sensing that main battery 4 no longer requires charging, it will reduce the

generator's output, and also open switch 14 for that same reason, since switch 14 is only closed when additional starting power or recharging is required].

With respect to Claim 6, [original] Nishimura discloses that the discharge of the second electrical power storage device is disabled during a startup of an engine [Fig. 1 col. 3 lines 19-23; the discharge of the second battery 15 is selectively enabled or disabled by controller 17 depending on whether or not the primary battery has sufficient capacity to start the engine].

With respect to Claim 7, [original] Nishimura discloses that the onboard power supply further comprises an electrical device [Fig. 1 low voltage load 3] that is provided with power by at least one of the first electrical power storage device [Fig. 1 battery 16] and the second electrical power storage device [Fig. 1 battery 15], wherein: the first electrical power storage device functions as a main power supply [battery 16 is the primary vehicle battery]; the second electrical power storage device functions as an auxiliary power supply [battery 15 is the secondary or backup battery]; and the second electrical power storage devices is capable of supplying the power to the electrical device whenever required [battery 15 is selectively enabled and disabled by switch 14 to supply power to either of or both high or low voltage loads].

With respect to Claim 8, [original] Nishimura discloses that the onboard power supply further comprises an electrical device [Fig. 1 low voltage load 3], wherein: the first electrical power storage device [Fig. 1 battery 16] functions as a main power supply; the second electrical power storage device functions as an auxiliary power supply [Fig. 1 battery 15]; and the second electrical power storage device supplies

power to the electrical device along with the first electrical power storage device [via high voltage bus 10 and low voltage bus 11, respectively].

With respect to Claim 9, [original] Nishimura discloses that the second electrical power storage device supplies power along with the first electrical power storage device during the power generation of the power generator [Fig. 1 this situation occurs whenever the engine is running i.e. switch 6 is closed and the generator is outputting power to high voltage bus 10 in order to charge both batteries].

With respect to Claim 10, [original] Nishimura discloses that the second electrical power storage device is directly charged by the power generator during the power generation of the power generator [Fig. 1 battery 15 is directly charged by power generator 2].

With respect to Claim 11, [original] Nishimura discloses that the first electrical power storage device is installed in an engine compartment of the vehicle; and the second electrical power storage device is installed in any one of an interior compartment and a trunk compartment of the vehicle [Examiner notes that that placement of the primary and secondary batteries does not impart any additional functionality to the claimed invention; i.e. actual location of either battery would not affect overall functionality].

With respect to Claim 12, [original] Nishimura discloses that the first electrical power storage device and the second electrical power storage device are rated at same volts. Examiner notes that Fig. 1 battery 15 is denoted by a “variable number of batteries” symbol, which indicates to the user that any desirable multiple of secondary

batteries can be used, including one. Examiner also notes that using two batteries of equal voltage does not significantly impair the functionality of the circuit since the secondary battery will still be capable of its intended purpose- as a backup for the primary battery. The dc-dc converter would be adjusted accordingly.

With respect to Claim 13, [original] Nishimura discloses that the second electrical power storage device is charged by the first electrical power storage device [col. 3 lines 52-67 and col. 4 line 1].

With respect to Claim 14, [new] Nishimura discloses an electric load [Fig. 1, high voltage load 13] that is mounted in a vehicle and connectable to the second electrical power storage device [Fig. 1, through switch 18], wherein a connection of the second electrical power storage device and the electric load is disabled [Fig. 1, by the opening of switch 14 under the control of controller 17] when the first state quantity is smaller than the predetermined value [This is essentially saying the same thing as the amended language of claim 1, because disabling the discharge of the second battery is the same as disabling the second battery from high voltage load 13, since the discharge of the second battery 15 *occurs through switch 14* to the high voltage load 13. Therefore, the logic in the flowchart of Fig. 2 applies here as well- the second battery is disabled via the first state quantity by the opening of switch 14. Refer to the arguments of claim 1 above].

With respect to Claim 15, [new] Nishimura discloses an electric load [Fig. 1, high voltage load 13] that is mounted in a vehicle and connectable to the second electrical power storage device [Fig. 1, through switch 18], wherein a connection of the second



electrical power storage device and the electric load is disabled [Fig. 1, by the opening of switch 14 under the control of controller 17] when the first state quantity is smaller than the predetermined value [This is essentially saying the same thing as the amended language of claim 1, because disabling the discharge of the second battery is the same as disabling the second battery from high voltage load 13, since the discharge of the second battery 15 *occurs through switch 14* to the high voltage load 13. Therefore, the logic in the flowchart of Fig. 2 applies here as well- the second battery is disabled via the first state quantity by the opening of switch 14. Refer to the arguments of claim 1 above].

### *RESPONSE TO ARGUMENTS*

Applicant's arguments filed 3/31/2006 have been fully considered but they are not persuasive, for the following reasons:

Applicant argues that Nishimura fails to disclose each and every feature, specifically "wherein the charge and discharge control device disables the discharge of the second electrical power storage device when the first state quantity is smaller than a predetermined value." This argument is simply a repeat of the amended claim language and has been fully met for claim 1 above, and is repeated again below:

In plain and simple English, this means: the second battery is turned off when the state of charge of the first battery is below a certain level. Refer to the flowchart in Fig. 2 (Drawing 1 above shows how the logic is implicit): at step 102, the controller checks the first state quantity (state of charge) of the first battery (storage cell 16). If the first battery is low (below a predetermined value), the second battery (storage cell 15) is checked to

see if it's state of charge is good, at step 103. If the second battery is also depleted (following the yes line), switch 14 is opened (the discharge is disabled), and the warning lamp is illuminated. This is the reverse of what is shown at step 104, which says if the second battery is good, then close switch 14 to enable discharge to first battery 16.

Applicant argues that Nishimura is silent, specifically concerning "the charge and discharge control device disabling the discharge of the second electrical power storage device when the first state quantity is smaller than a predetermined value." This is the same argument as the first one, and has been addressed above, as well as in Claim 1 and claim 15. As explained above with respect to Claims 1 and 15, and with the aid of Nishimura's Fig. 2 flowchart; controller 17 does in fact disable battery 15 through the opening of switch 14, for the purpose of preventing both batteries from totally dying.

Applicant's arguments have been fully considered and rebutted. Applicant's amended claims and new claims have been considered, and the rejections under 35 U.S.C. 102[b] and 103[a] by Nishimura [US-6313546] stand. Accordingly:

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Conclusion***

The following reference [Murty et al US 6909201] is cited for its disclosure of an onboard power supply with primary and secondary battery, with generator, dc-dc converter, and multiple loads.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard V. Muralidar whose telephone number is 571-272-8933. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl D. Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RVM  
6/27/2006



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